AMENDED CLAIMS
[received by the International Bureau on 18 March 2004 (18.03.04);
original claim 5-14 cancelled;
claims 2-5, 8, 11-13 amended;
claims 14-18 added]

We claim:

1. In a body (30, 48) having a conduit (38, 68) formed of a first passageway (32, 50) having a first longitudinal axis (33, 52) and a second passageway (34, 54) having a second longitudinal axis (35, 56) wherein the first and second longitudinal axes intersect at an angle other than 180 degrees, the improvement characterized by:

an enlarged cavity (36, 58) having a center point (42, 60) at the intersection of the first and second longitudinal axes.

2. The improvement of claim 1 wherein the enlarged cavity is generally spherically shaped.

3. The improvement of claims 1 or 2 wherein the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.

4. The improvement of any of claims 1-3 wherein the angle is about 90 degrees.

5. The improvement of any of claims 1-4 wherein the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.

6. A method of manufacturing a body having a conduit with a first passageway having a first longitudinal axis and second passageway having a second longitudinal axis wherein the first and second longitudinal axes intersect at an angle other than 180 degrees, and an enlarged cavity having a center point at the intersection of the first and second longitudinal axes, comprising the steps of:

drilling the first passageway into the body along a first longitudinal axis;

drilling the second passageway into the body along the second longitudinal axis until the second longitudinal axis intersects the first longitudinal axis;

utilizing electromechanical machining to remove material from the walls of the first and second passageways adjacent the intersection of the first and second longitudinal axes until the enlarged cavity with a center point at the intersection is formed.

7. The method of claim 6 wherein the step of utilizing electromechanical machining includes removing material evenly in all directions to form a spherical cavity.

8. The method of claims 6 or 7 further comprising removing material in all directions until the diameter of the cavity is twice the diameter of one of the first and second passageways.

9. A fuel distribution system (100) for an internal combustion engine comprising:

a pump (102);

an injector (104);

a fuel conduit (108) in a body (106), fluidly connecting the pump(102) to the injector (104), said fuel conduit being adapted for delivery of fuel at high pressure, having a first passageway (110) with a first longitudinal axis (112) and a second passageway (114) with a second longitudinal axis (116) wherein the first and second longitudinal axes intersect at an angle other than 180 degrees; and

an enlarged cavity (120) having a center point (122) at an intersection of the first and second longitudinal axes.

10. The fuel distribution system of claim 10 wherein the enlarged cavity is generally spherically shaped.

11. The fuel distribution system of claims 9 or 10 wherein the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.

12. The fuel distribution system of any of claims 9-11 wherein the angle is about 90 degrees.

13. The fuel distribution system of any of claims 9-12 wherein the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.

14. A unit fuel injector (100) for an internal combustion engine, the unit fuel injector being of the type comprising a pump (102), an injector (104), and a body (106), characterized by:

a fuel conduit (108) in the body (106), fluidly connecting the pump(102) to the injector (104), said fuel conduit being adapted for delivery of fuel at high pressure, having a first passageway (110) with a first longitudinal axis (112) and a second passageway (114) with a second longitudinal axis (116) wherein the first and second longitudinal axes intersect at an angle other than 180 degrees; and

an enlarged cavity (120) having a center point (122) at an intersection of the first and second longitudinal axes.

15. The unit fuel injector of claim 14 wherein the enlarged cavity is generally spherically shaped.

16. The unit fuel injector of claims 14 or 15 wherein the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.

17. The unit fuel injector of any of claims 14-16 wherein the angle is about 90 degrees.

18. The unit fuel injector of any of claims 14-17 wherein the diameter of the enlarged cavity is at least twice the cross sectional diameter of one of the first and second passageways.